Public Works (1901) Department.

G.O., No. 187-I

DATED 16-6-1901.

The Notes
in this G.O. have been printed.

[Despatch Abstract.]

Palayamparavoo Anicut, Madura Dn

An estimate, amounting to Rs. 40,000, for excavating a new permanent channel from the Uthamathu anicut for the irrigation of lands under the ruined ——, sanctioned with remarks.

[P. W. O. 2,500—26-7-02.]

Indexed

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Mez 17/4/11

BACK PAPERS.

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Government of Madras.

PUBLIC WORKS DEPARTMENT.

IRRIGATION.
ACCOUNT.

Recd.	1911.	*Enclosures*	
Regd.		*Spare copies*	

G.O., No. 187 I., 16th June 1911.

Paliamparavoo anicut, Madura division

An estimate, amounting to Rs. 40,0)0, for excavating a new permanent channel from the Uthamath anicut for the irrigation of lands under the ruined —, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Account.

Read—the following papers :—

I

G.O., No. 197 I., dated 8th May 1909.

Abstract.—Sanctioning the estimate amounting to Rs. 3,300 for excavating a temporary channel from the Uthamath anicut, Madura district, to irrigate lands under the Paliamparavoo anicut.

II

From the Supg. Engr.,	VI	Circle,	dated	25th May	1909,	No. 429 C.E.
,,	,, VI	,,	,,	7th July	,,	,, 538 C.E.
Reminder to	,, VI	,,	,,	14th October	,,	
From the	,, VI	,,	,,	24th ,,	,,	,, 883 C.E.
,,	,, VI	,,	,,	19th November	,,	,, 967 C.E.
To the	,, VI	,,	,,	14th December	,,	R.O.C. No. 2959/09.
,,	,, VI	,,	,,	22nd ,,	,,	,, ,, ,,
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,,	,, VI	,,	,,	14th March	,,	,, 290 C.E.
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From the	,, VI	,,	,,	11th ,,	,,	No 391 C.E.
,,	,, VI	,,	,,	16th May	,,	,, 500 C.E.
To the	,, VI	,,	,,	27th ,,	,,	R.O.C. No. 2959/09.
Reminder to	,, VI	,,	,,	25th November	,,	
From the	,, VI	,,	,,	7th December	,,	No. 1190 C.E.
,,	,, VI	,,	,,	22nd February	1911	,, 249 C.E.
,,	,, VI	,,	,,	12th March	,,	,, 335 C.E.
,,	,, VI	,,	,,	6th April	,,	,, 431 C.E.

Enclosure.

Report to accompany the estimate for excavating a new channel from the right flank of the Uthamath anicut for the irrigation of lands under the old Paliamparavoo anicut channel in the Suruliyar valley, Periyakulam taluk, Madura district.

	RS.
Amount of estimate	38,200

Old Paliamparavoo anicut.—The history of this anicut cannot be clearly traced. It appears however that on three different occasions an anicut has been built at or near the present site. On the last occasion on which it was reconstructed it was built of brick in mortar with a drop of 14 feet in rear, with a broad cushion, retaining walls, etc. This was about 1888 or so, *i.e.*, about 7 or 8 years before the advent of the Periyar irrigation.

Information regarding the nature of the sub-soil on which the anicut, etc., was founded is not traceable but on examination of the site, no hard stuff is met with, within 20 feet from the crest of the anicut; at the same time the soil is not sufficiently sandy to admit wells for the foundations being sunk. The sub-soil consists of grey stiff clay with indications that lime kunker which forms the general substratum of the valley will be met at a considerable depth. The section of the body walls of the anicut is reported to have been sufficiently strong, but during the heavy rains of October last, some of the important tanks in the Cumbum valley and above this anicut breached, which resulted in an abnormal flood in the river and the anicut was bodily washed away leaving only the wings in tact.

2. *Reconstruction of the anicut.*—Owing to the nature of the sub-soil at the site of the old anicut it would be impossible to reconstruct it except at prohibitive cost, and as no better site for the construction of a new anicut is available higher up the river, within a reasonable distance, the idea of building a new anicut may be given up. An additional reason for abandoning all idea of reconstructing the anicut is that in its present state the river is perennial except perhaps during the short period of closure of the Periyár channels, and the incidental charges such as the construction and maintenance of a coffer-dam of suitable section, to allow the drainage from the catchment of about 143 square miles above the anicut in addition to the constant flow of Periyár water (1,500 cusecs) would add immensely to the cost of the work. It has therefore been proposed to excavate a new channel from the existing Uthamath anicut about 3·08 miles higher up the river, for the supply of lands under the anicut now washed away.

3. *Irrigation.*—The ayacut under the Paliamparavoo anicut is about 2,000 acres (in round figures) of valuable wet lands, yielding an annual revenue of about Rs. 15,000 to Government. There were standing crops on the whole area when the anicut was washed away and it was imperative to take immediate steps to save the crops. The sill of the head sluice being at 42·50 with the old anicut crest at 45·50 and the river bed at 34·50, the construction or formation of a korambu at a reasonable cost, to divert the required quantity of water into the channel was in consideration of the levels noted above, found to be quite impossible. Hence another cheaper proposal was resorted to. A temporary channel 5 feet wide was excavated as speedily as possible from above the Uthamath anicut and the whole ayacut with very rare exceptions was supplied with water and the standing crops saved. An estimate amounting to Rs. 3,300 to cover the outlay incurred for the excavation of the channel was sanctioned in G.O., No. 197 I., dated 8th May 1909.

4. *Permanent channel.*—The question of either reconstructing the anicut or constructing a new one having been abandoned for the several reasons set forth in paragraphs 1, 2 and 3 *supra*, the question of excavation of a new permanent channel from the Uthamath anicut was put before the Chief Engineer for Irrigation who has approved the proposal and Government have in paragraph 3 of their Order No. 197 I., dated 8th May 1909, called for the early submission of the plans and estimate for the work in question—*vide* also correspondence ending with Chief Engineer for Irrigation Memorandum No. R.O.C. 2959, dated 12th April 1910.

5. The new temporary channel has been so aligned and excavated that it will be absorbed in the permanent one with very slight diversions in places marked A, B and C and shown in red dotted lines on the survey tracing enclosed (plan No. M. 291/1910). When the temporary channel was being excavated, a temporary dam had to be put in across the Varattar to use the water of that stream for the irrigation. Hence this portion of the channel (marked A) had to be diverted while those at B and C are due to the objections of the owners of land through which it runs. The course of the temporary channel at the places where diversions from it are now proposed will be obliterated and levelled to the adjoining ground.

6. The proposed permanent channel as aligned passes through two important villages, Naranathevanpatty and Kamayakavandanpatty.

In the former, the channel runs almost wholly through dry lands except for about 10 chains at the head where it passes through wet lands and in the latter almost wholly through wet lands.

The channel in its course through the latter village runs across the ayacut of the two tanks (Sevakulam and Kesavarpuram tanks) and cuts off also the supply to the two lower ones (Tamaraikulam and Pallamkulam tanks). The capacity of these two latter tanks being quite insufficient to hold an adequate supply for the ayacut under them, and as the proposed channel cuts off their original source of supply it would be almost impossible to prevent the ryots holding lands under these tanks from taking water from the channel which commands their lands. It is therefore considered better to include under the ayacut of the proposed channel, such of the lands on the left as can conveniently be commanded by the channel and the whole extent of irrigation under the 2 tanks Tamaraikulam and Pallankulam.

These two tanks will then be abandoned and their beds may be sold for wet cultivation realising probably a sum of Rs. 27,600—*vide* D. Dis. No. 4165, dated 5th November 1909 from the Collector of Madura to the Superintending Engineer, VI Circle.

Thus in consideration of these facts and in view of the possible extension of cultivation in future years, the channel has been designed to irrigate 2,500 acres on an assumed duty of 40 acres. An explanation of the low duty assumed will be found in Executive Engineer's No. 87 S.E., dated 2nd February 1910 paragraph II. If it is found possible hereafter to raise the duty to 60, the area may be proportionately increased.

7. It is proposed to excavate the channel to a bed width of 7 feet with side slopes of 1 to 1 and a bed fall of 4 feet per mile (*vide* calculation sheet) and a depth of $2\frac{1}{2}'$ at F.S.L. throughout. It runs mostly in cutting and whenever the depth of cutting is less than the F.S.L. of the channel, banks will be provided to a height of $2\frac{1}{2}$ feet above F.S.L. with top width 4 feet and side slopes $1\frac{1}{2}$ to 1.

8. The river runs from south to north and turns direct west until it reaches the anicut. It is proposed to take off the channel just at the bend so as to have an uninterrupted supply. As there is every possibility of the river encroaching on the right margin and working its way towards the course of the channel, it is proposed to give it an open mouth and to locate the head-sluice at B—*vide* survey plan No. M—292/10—726 feet below its offtake from the river. Flood banks will be run from the headsluice to join the old flood bank of the anicut at A, and the flood bank of the Kuthanatchi odai on the right. This odai is almost perennial and tails into the Suruliyar about 800 feet above the point from which the proposed channel takes off. The river bed of the Suruliyar from where the open channel starts is assumed to be 76·08.

The observed M.F.L. of October 1908 was 87·00 at the Uthamath anicut and 89·50 in the Kuthanatchi odai and it is proposed to raise the flood bank to 3 feet above these levels with top width 6 feet and side slopes $1\frac{1}{2}$ to 1 *vide* plan No. M 295 and 296/10 accompanying. The line now adopted for the flood bank has been set back to what is considered to be a safe distance from the river margin. Longitudinal section has not actually been taken along this line but sufficient field levels have been taken and are plotted for purposes of estimating for the flood bank and the extent of land to be occupied by it. The lie of the ground is generally flat east and west.

9. *Ayacut.*—The new channel as now proposed has no direct irrigation under it until it joins the old Paliamparavoo anicut channel except—

(i) the ayacut under the old irrigation channel (at Uthamath anicut) taking off from the river with an open head and now absorbed by the new channel.

(ii) that portion of the wet lands in Kamayakavandanpatti village 160 acres in extent absorbed and cut off from irrigation by the new channel.

(iii) the 20 acres of garden lands which are now water logged in the Naranathevanpatty village.

For the irrigation of the lands referred to in (i) and (iii) above, two nine-inch cement pipe sluices, as per plan No. M 302/10, are provided and for the valuable wet land referred to in (ii) above a masonry sluice shown in plan No. M 305/10 will be built. For the irrigation of the ayacut of the Tamaraikulam and Pallankulam tanks and of the tank beds themselves a sluice will be constructed but till the tanks have been sold and the beds prepared for cultivation the proper site for the sluice and hence its design cannot be settled. A lump sum of Rs. 240 is therefore provided in the estimate.

The sills of these sluices have been kept a foot higher than the bed of the channel, firstly with a view to suit the level of the lands they have to irrigate and secondly so that in the closure of the Periyar, spring water to which the lands under the old channel alone are entitled to may flow on without diminution by supplying these ayacuts.

10. *Headsluice—plan No. M* 297/10.—The sill of the headsluice is fixed at + 75·75 with reference to the bed of the river above and the crest of the anicut which is 78·85. It will have one vent measuring 6′ × 3′ provided with a screw gearing shutter (straight wings are allowed as desired by the Chief Engineer for Irrigation). The sluice will be capable of discharging the full supply with a depth of ·15 on the anicut crest.

11. *Cross drainages.*—The channel in its course of 3 miles and odd intercepts several drainage channels, cart-tracks, irrigation channels, etc., and for all of them suitable masonry works have been proposed as per plans enclosed.

12. *Drops.*—The sill of the new headsluice having been fixed at 75·75 and the bed of the old Paliamparavoo anicut channel being at 43·63, there is a fall of 32·12 feet to be disposed of. Of this, 12·12 feet has been absorbed by the bed fall allowed for the channel and it is proposed to make up the balance of 20 feet by the construction of 2 five feet drops and a ten feet drop at chainages 8,976, 14,170 and 16,010 respectively. Alternative designs are submitted for drops Nos. 1 and 3, *i.e.*, ordinary open drops (No. 3 being in 3 steps of 3′ 4″ each) and Colonel Ellis design of syphon drops. The latter are somewhat more costly but may be adopted in preference to the former as suggested by the Chief Engineer for Irrigation.

No. 2 drop at 14,170 is a combined drop and syphon under the Varattar stream also according to Colonel Ellis design. The Varattar has a catchment of 6 square miles of hilly and steep country. The maximum flood discharge in the stream has been calculated by Dicken's formula with a co-efficient of 1000. This is a very high co-efficient and as a waterway of 441·14 square feet at M.F.L. is allowed in the confined portion of the stream bed, it is considered that very ample provision for the drainage has been made. Below this crossing the channel alignment meets the old Varattar channel which it follows till below No. 3 drop at 16,010 it meets the existing Paliamparavoo channel.

13. *Culverts.*—Three new culverts at 4,785 feet, 13,280 feet and 11,748 (the latter to replace the existing one in ruins) will be constructed as per plan M No. 301/10. The design is a simple one and calls for no special remarks except that narrow vents are provided because slabs though obtainable locally cannot be easily obtained in greater lengths than about 6 feet.

14. *Under-tunnel and aqueducts.*—At 1,584 feet from the head, a small drainage course is interrupted by the channel. A small under-tunnel plan No. M 298/10 will be constructed.

15. To cross a drainage channel a branch of the Kuthanatchi odai, a small aqueduct will be constructed, at chainage 3,630 feet—plan No. M 300/10—the design calls for no remarks. At 6,336 and 6,930 small irrigation channels from upper tanks meet the channel. They will be led over it by means of cheap iron-pipe aqueducts as per plan No. M 298/10 and M 304/10.

16. At 6,039 feet there is a drainage course which also served as a passage for cattle and people. The new channel crosses this in embankment and it is therefore proposed to construct an under-tunnel so as to pass the new channel above and the drainage course and the passage below as per plan No. M 303/10.

17. *Outlet and regulator combined.*—At 12,408 from the head, the proposed channel intercepts the surplus channel of Sevakulam tank. To pass this drainage an inlet and outlet as per plan No. M 307/10 is proposed and designed so as to discharge the maximum quantity estimated as likely to come down the surplus channel. To regulate the flow in the irrigation channel, a regulator has been proposed to be constructed in combination with the outlet as shown on the drawing and provision has been made in the estimate for shutters which will be used when the surplus of the tank is heavy. It might be better to design this outlet as a calingula with its crest about 1 foot above channel bed and dam stones at F.S.L. This would minimise the risk of breaching in the channel below in sudden floods if the shutters were not put in and also prevent silting in the channel. The ryots will themselves turf the calingula to F.S.L. If approved alteration can be made before sanction.

18. Provision is also made in the estimate for compensation for land required for the channel and for the flood bank; but this amount has been entered subject to alteration by the Revenue Department.

19. Provision for demarcation stones, miles stones, furlong stones is also made in the estimate.

20. Hydraulic particulars, the nature of soil, the sub-soil, the levels at which these are met with have been noted on the plans of all the masonry works.

21. Good earth for the manufacture of bricks all along the proposed course of the channel is available. It is therefore proposed to construct all masonry works with brick in mortar. Though stone is available, the cost of carriage makes its use too expensive.

22. The rates entered in the estimate are fair and most of them are supported by data.

V. HART,
Executive Engineer, Madura Division.

7th November 1910.

III

Memorandum R.O.C. No. 2959/09, dated 18th April 1911.

With reference to letter No. 431-C.E., dated 6th April 1911, from the Superintending Engineer, VI Circle, the Chief Engineer for Irrigation has the honour to return herewith the plans and estimates of the Paliamparavoo channel, Madura division. The estimate is now before Government and their orders thereon will be communicated to the Superintending Engineer by telegraph as soon as obtained.

(By Order.)

J. M. LACEY,
Asst. Chief Engineer for Irrigation.

To the Superintending Engineer, VI Circle,
with the plans and estimates.

IV

Note by the Chief Engineer for Irrigation, R.O.C. No. 2959/09, dated 11th April 1911.

Administrative and historical.—The Paliamparavoo anicut is the third anicut across the Suruliyar, having an ayacut of about 2,100 acres yielding a revenue of nearly Rs. 15,000 which is supplied by the Paliamparavoo channel taking off above the anicut. This anicut was entirely washed away in October 1908 owing to an abnormal flood in the river due to the breaching of several tanks in the Suruliyar valley during the heavy rains in that month. The formation of a korambu or mud dam across the river at a reasonable cost to divert the supply into the channel in order to save the standing crops was found to be impossible and a new channel was excavated at a cost of Rs. 3,300 from the Uthamath anicut, 3 miles higher up the

river, to supply the above lands. The estimate for this work was sanctioned in G.O., No. 197 I., dated 8th May 1909. The new channel proved successful, and the whole ayacut with rare exceptions was supplied and the standing crops saved.

In his inspection notes, dated 4th January 1909, the Superintending Engineer, VI Circle, brought to notice that the failure of the Paliamparavoo anicut was not the first of its kind and that it had been rebuilt on several occasions. It was also reported that the sub-soil was of a treacherous nature, that it was inadvisable to attempt to rebuild the anicut at the same site, and that there was no other site suitable for constructing an anicut higher up the river. The Superintending Engineer recommended the abandonment of the idea of reconstructing the anicut and proposed that the temporary channel excavated from above the Uthamath anicut might be made permanent; he further stated that an estimate was being prepared for the work. In this office memorandum No. 413 I., dated 5th February 1909, the Superintending Engineer was requested to obtain the countersignature of the Collector to the estimate before its submission for sanction as a token of his approval to the proposal. With his letter No. 967-C.E., dated 19th November 1909, the Superintending Engineer, VI Circle, submitted plans and estimates, amounting to Rs. 34,800, for the work countersigned by the Collector. It was reported that the new channel would be open only during the Periyar supply season of nine months in the year, that the Uthamapalayam ryots have a preferential right to the hot weather supply at Uthamath anicut, and that the ryots under the Paliamparavoo channel should make their own arrangements for obtaining the hot weather supply to their channel by means of a korambu at the old head of their channel. The plans and estimates were returned to the Superintending Engineer with this office R.O.C. No. 2959 of 1909, dated 12th April 1910, with certain remarks for revision and resubmission.

2. *Descriptive.*—The Superintending Engineer now resubmits the estimate duly revised to Rs. 38,200. The estimate provides for—

(1) Cutting and widening the temporary channel and providing banks where necessary.

(2) Forming a flood bank for a length of 2,670 feet with a margin of 3 feet above the observed M.F.L., commencing from the left wing of the Uthamath anicut to the right bank of the Kuthanatchi drainage and stream connecting the head sluice.

(3) Constructing masonry works connected with the channel.

Provision is also made in the estimate for compensation for lands to be acquired and for demarcation.

Technical.

3. *Channel.*—The channel from the right flank of the Uthamath anicut to its junction with the old Paliamparavoo channel is 3 miles 1,860 feet long and follows closely the alignment of the temporary channel already excavated, except where three short diversions of lengths of about 400,600 and 1,600 feet, respectively, marked on the site survey were found necessary. It is designed to have a bed width of 7 feet, depth $2\frac{1}{2}$ feet, slopes 1 to 1 and bed-fall 4 feet per mile to carry $62\frac{1}{2}$ cusecs, assuming a maximum capacity duty of 40 acres per cusec for the irrigation of an ayacut of 2,500 acres which is made up as follows, viz.—

(*a*) The ayacut of 2,132 acres under the old Paliamparavoo channel,

(*b*) the ayacut and the bed of the two tanks through whose foreshore the new channel passes, 98 acres;

(*c*) the 20 acres of garden lands which are now water-logged in the Naranathevanopatti village,

(*d*) the area under the irrigation sources interfered with by the new channel, viz., 210 acres—total 2,460 acres or say 2,500 acres.

This low duty of 40 has been allowed as the old channel cannot work at a higher duty and the advantages of remodelling it to work to a higher duty would not be commensurate with the expense and trouble involved. Banks will be provided where necessary with a margin of $2\frac{1}{2}$ feet above F.S.L., minimum top width 4 feet and slopes $1\frac{1}{2}$ to 1.

Flood bank.—The top width and side slopes of the flood bank at the head have been increased in this office from 6 to 8 feet and from $1\frac{1}{2}$ to 1 to 2 to 1, respectively.

Head sluice.—This consists of a single vent 6 feet wide and 3 feet high regulated by a screw-gearing shutter with ball-bearing arrangements and can pass the required supply with a head of 6 inches. The thickness of concrete to foundations may be reduced from $2\frac{1}{2}$ to $1\frac{1}{2}$ feet if the Superintending Engineer sees no objection to the same. The soil as reported is kunkar at that depth, and the thickness of concrete provided appears excessive.

Iron pipe adqueduct at 6,336.—Pipes of 6 inches diameter have been substituted, for those of 4 inches allowed in the estimate.

Inlet and outlet with regulator at 12,408 *feet.*—The value of 570 taken for C (in the formula $D = C\ M^{\frac{2}{3}}$) in calculating the maximum flood discharge from the drainage area is considered low and has been raised to 700, the discharge being increased from 757 to 1,113 cusecs. The crest of the inlet wall has now been lowered to F.S.L. in the channel and provision made for raising the bank by $1\frac{1}{2}$ feet for a length of 300 feet at the site. It is suggested in the report accompanying the estimate that the proposed outlet may be built as a calingulah with its crest at 1 foot above bed of channel and dam stones at F.S.L. with a view to minimise the risk of breaches in the channel in case of sudden floods and also to prevent silting in the channel. Considering the remoteness of the locality from the ayacut under the channel and the possible wastage of water by leakage through the turf bund to be erected over the calingulah, it is not considered advisable to convert the outlet wall into a calingulah.

Aqueduct at 3,630 *feet.*—This is designed to pass the cross drainage amounting to 556 cusecs under the channel. The work as designed necessitates the cutting of deep approach channels in front and rear. It might be better to carry the channel under the drainage stream by means of a syphon and a design prepared in this office costs Rs. 1,640 against Rs. 1,840 for the aqueduct. This may be adopted if the Superintending Engineer finds it suitable.

As the lump sum provided for constructing sluices in the channel for supplying the ayacut under the Tamaraikulam and Pallankulam tanks proposed to be abandoned is considered inadequate, it has now been increased from Rs. 240 to Rs. 500 to meet also the cost of excavating distributaries.

Compensation for land.—The value of compensation allowed is not based on the information from the Revenue authorities. The Executive Engineer, Madura Division, in his letter No. 245-S.E., dated 8th March 1911, states that the compensation for land has been fixed after careful enquiry and there is no reason to think that the amount will be exceeded and that the Sub-Divisional Officer has been ordered to prepare complete land plan and schedule without delay for submission to the Collector. The amount of compensation has been increased from Rs. 17,681 to Rs. 18,000 to meet the cost of the extra width of land required owing to the alterations made in this office in the top width and slopes of the flood bank. This amount does not include the percentage charges allowable for compulsory acquisition. The Superintending Engineer should see that the amount of land compensation is ascertained in consultation with the Revenue Department before the work is put in hand.

The alterations carried out in this office have raised the amount of estimate from Rs. 38,200 to Rs. 40,000. With reference to letter No. 249-C.E., dated 22nd February 1911, from the Superintending Engineer, VI Circle, the Chief Engineer for Irrigation considers that "well drops" should be constructed.

4. *Financial.*—As the proposed channel is chiefly intended to irrigate the existing ayacut already assessed, and as no extension of irrigation is admissible in the valley until all the lands commanded by the Periyar canals and channels are brought under cultivation, no extra revenue is anticipated beyond the sum of Rs. 1,300 referred to in paragraph 6 of the Superintending Engineer's letter No. 967-C.E., dated 19th November 1909, which is equivalent to a return of 3·3 per cent. on the capital outlay. Besides this, the proposed work will obviate the necessity of maintaining an anicut, which has been reconstructed on several occasions, and on which a sum of Rs. 382 has

been incurred annually, on the average, of recent years. In view of the assured supply to existing irrigation, the work is considered to be of sufficient importance irrespective of the revenue return, and it may be sanctioned as a class IV (*a*) Minor Work for which neither Capital nor Revenue Accounts are kept.

5. The Superintending Engineer's action in having permitted the Executive Engineer to collect materials in anticipation of sanction to the estimate may be approved considering the urgent nature of the work.

H. E. CLERK,
Ag. Chief Engineer for Irrigation.

To the Joint Secretary to Government, Public Works Department (Irrigation) with the papers quoted in original.

Order—No. 187 I., dated 16th June 1911.

The following estimate is sanctioned :—

Provincial.

Irrigation.

43. Minor Works and Navigation.

Class IV Minor Work for which neither Capital nor Revenue nor individual accounts are kept.

(*a*) in charge of the Public Works Department.

Original Works.

Madura Division.

Excavating a new permanent channel from the right flank of the Uthamathu anicut for the irrigation of lands under the ruined Paliamparavoo anicut.

	RS.
Estimate	* 40,000

* Includes Rs. 18,000 for land compensation.

2. This sanction is registered as No. 24 I. of 1911–1912.

3. The attention of the Superintending Engineer, VI Circle, is drawn to the remarks of the Chief Engineer for Irrigation in paragraph 3 of his foregoing note.

4. The action of the Superintending Engineer in having permitted the Executive Engineer to collect materials in anticipation of sanction to the estimate is approved.

(True Extract.)

H. E. CLERK,
Joint Secretary to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle, with plans and estimate.
" Accountant-General, Madras.
" Revenue Department.
" Financial Department.

Forwarded to the

(By Order.)

Depuy Registrar.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

NOTES CONNECTED WITH G.O., No. 187 I., DATED 16TH JUNE 1911.

[SUBJECT.—*Estimate of Rs.* 40,000 *for excavating a new channel for the irrigation of land under the Paliamparavoo anicut, Madura division.*]

Note by the Chief Engineer for Irrigation, dated 11*th April* 1911, *R.O.C. No.* 2959/09.

Under Secretary—

A draft order sanctioning the estimate is submitted and may, if approved, be forwarded to Revenue and Financial for acceptance.

2. The details of the proposed work are explained in the above note by the Chief Engineer for Irrigation.

T.S.R.
8-4-11.

M.S.V.
8-4-11.

Joint Secretary—

Submitted.

J. M. LACEY.
11-4-11.

H. E. CLERK.
11-4-11.

To the Revenue Department }
„ *Financial* „ } *u.o.*

REVENUE DEPARTMENT.

To Under Secretary—

The Chief Engineer's note explains fully the details of the new channel to be executed for the irrigation of the wet lands under the old Paliamparavoo * anicut which was washed away. The points for consideration in this department are (1) whether any existing rights are affected by the scheme; (2) whether the provision for compensation for lands to be acquired is adequate; and (3) whether the return expected from the scheme justifies the outlay. These points will be dealt with below *seriatim*.

* In the Periyakulam taluk, Madura district.

2. (1) *Existing rights, if any, likely to be affected.*—The old anicut was washed away and owing to the treacherous nature of the soil it could not be restored; nor was it found feasible to erect an anicut elsewhere near the site of the old one. It is therefore proposed to use the existing Uthamath anicut about 3 miles higher up for the purpose and take off the water from its right flank by a new channel. The Uthamath ryots naturally object to this proposal. But if their rights will not be affected in any way and if they will not get any diminished supply by the new arrangement their objections are of no avail. The sills of the head sluices of the Uthamath channel and the new channel for the Paliamparavoo lands will be of the same level and the latter channel will be open only during the Periyár season of supply when water overflows the Uthamath anicut. The Paliamparavoo ryots cannot of course draw any spring water during the hot weather from this source. The Collector would keep the old Paliamparavoo channel lower down for this

purpose and the Paliamparavoo ryots should put up a mud dam or korambu on the site of their old anicut and catch the hot weather supply. It is submitted that these arrangements will avoid any real damage being possibly caused to the Uthamath ryots. Their objections need not therefore be considered.

3. The ryots who are likely to be affected next are those of (1) Naranathevanpatty and (2) Kamayakavandanpatty. By the alignment of the new channel 20 acres of garden land of the former will become water-logged and 160 acres of wet land of the latter will be intercepted from the source of irrigation. The Public Works Department have proposed to have these lands irrigated by the new channel and the estimate provides for proper sluices for them.

It may be assumed that Public Works Department are satisfied that it is possible to let down enough water to the Uthamath anicut to supply the old ayacut of the Uthamath channel fully in addition to the lands under the old Paliamparavoo channel. In the hot weather when water is low Public Works Department are arranging to give preference to the Uthamath ryots. No objection need be raised.

J.T.G.
2–5–11.

The new channel also cuts off the supply to the two irrigation tanks of Thamaraikulam and Pallankulam which will have to be abandoned. The ayacut under these tanks is proposed to be brought under the irrigation of the new channel. The tank bed will be sold as wet land under the new channel. The estimate thus completely provides for the irrigation of all the lands affected by the new channel.

4. (2) *Compensation for lands to be taken up for the channel.*—No schedule of lands required to be taken up has been prepared by the Public Works Department and sent to the local Revenue officers. The extent of land under each class has therefore been only roughly calculated. The Deputy Tahsildar of Uthamapalayam originally valued the lands as follows :—

	RS.
10·83 acres wet at Rs. 600 an acre	6,498
6·33 acres dry garden at Rs. 200 an acre	1,266
3·10 acres dry at Rs. 75 an acre	232
Total ...	7,996 or 8,000

The Tahsildar of Periyakulam estimated the amount at Rs. 10,000 including the usual 15 per cent. allowance and the Collector of Madura accepted this figure.

The revised estimate finally prepared by the Public Works Department provides for a compensation of Rs. 18,000 based on the Executive Engineer's valuation of Rs. 17,681 as shown below :—

	RS.
13·40 acres wet at Rs. 1,200 an acre	16,080
·21 acre dry to wet at Rs. 150 an acre	32
5·21 acres dry garden at Rs. 200 an acre	1,042
5·27 ,, dry at Rs. 100 an acre	527
Total ...	17,681
Additional land owing to alterations made by the Chief Engineer.	319
Total ...	18,000

The Executive Engineer in his No. 245-S.E., dated 8th March 1911, states that these figures are subject to revision by the Revenue Department but that he has no reason to think that they will be exceeded. The question is not that these figures will be exceeded but whether such high rates for wet lands should be unnecessarily allowed to remain in the estimate so as to give inducement for awarding higher rates. The Executive Engineer adds that an approximation of the value has been made by enquiry in the locality from the local officers and from experience of other cases. The enquiry seems to have been oral since no statements obtained from any local officers are forthcoming. The Deputy Tahsildar's estimate

of the value of wet lands at Rs. 600 an acre was made in September 1909 and the Executive Engineer's letter referred to above is dated March 1911. The value of wet land would not have doubled itself during a period of a year and a half. In support of his valuation the Deputy Tahsildar stated that the average selling price was ascertained from the copies of sale-deeds in the Sub Registrar's office and from local enquiry. If the Executive Engineer's appraisement be allowed, the 15 per cent. allowance amounting to Rs. 2,700 should be added to the total and a sum of Rupees 20,700 will have to be provided for in the estimate.

If the Deputy Tahsildar's valuation of wet lands at Rs. 600 an acre and of dry lands at Rs. 75 an acre be adopted in respect of the extent now proposed to be taken, the amount of compensation will be Rs. 10,935 or Rs. 11,000 in round figures. It is not known whether any trees, etc. have to be paid for; Rs. 12,000 may be provided to cover all cases including the provision for the additional extent required owing to the Chief Engineer's alterations. It is for orders whether Rs. 20,700 should be provided for or Rs. 12,000.

	RS.
13·40 wet at 600	8,040
·21 dry into wet at 150	32
5·21 garden at 200	1,042
5·27 dry at 75	395
Total ...	9,509
15 per cent. of the above ...	1,426

3. *Return expected from the scheme.*—The main object of the new channel is to provide for the irrigation of 2,100 acres yielding a revenue of Rs. 15,000 under the old Paliamparavoo anicut which has been washed away. A temporary channel constructed by Government at a cost of Rs. 3,300 to save the crops is now in use and it is proposed to have a permanent channel. It is therefore out of question to consider any extra revenue derivable from the scheme. It is not contemplated for the present to extend wet cultivation except in the way of providing for the irrigation of the wet lands the irrigation of which has been intercepted by the new channel. The wet lands under the two tanks which will have to be abandoned will be irrigated by a superior source, but no higher rates of assessment can be charged on that account. The only extra revenue that will be derived is the sale-proceeds of the tank-bed lands (* 46 acres) estimated at Rs. 600 an acre and the wet assessment of Rs. 5 an acre on those 46 acres. The Superintending Engineer works out the return thus:—

	RS.
Four per cent. on Rs. 27,600 (46 × 600)	1,104
Wet assessment on 46 acres at Rs. 5 an acre	230
Total ...	1,334
Less—	
Excess at As. 12 an acre on Rs. 46	34
Net revenue ...	1,300

This does not include the savings of the maintenance of the old assessment which amounted to Rs. 382 a year. The total estimate for the work as revised is Rupees 40,000. If Rs. 12,000 be adopted for compensation, the estimate will be reduced to Rs. 34,000. If Rs. 20,700 be adopted, the estimate will be raised to Rs. 42,700.

The Public Works Department (Irrigation) figures presumably allow for the 15 per cent. It will be the duty of land acquisition officer to see that an excessive rate is not allowed. I think for purposes of an estimate the Public Works Department (Irrigation) figures may be accepted though it would have been more satisfactory if they had got their estimate from the Revenue authorities.

J.T.G.
2–5–11.

The Chief Engineer's note might make it clear that the Rs. 18,000 are to *include* the 15 per cent. for compulsory acquisition.

A. G. CARDEW.
3–5–11.

I doubt this. If we were surer that we are substituting a superior source it might be possible to enhance the rate.

But as resettlement is nearly due, I don't think it is necessary to take up the matter now.

J.T.G.
2–5–11.

* Area of the beds of two tanks.

The return will then be 3·8 per cent. or 3·0 per cent. The revenue foregone on patta lands acquired amounting to Rs. 60 or 70 has not been taken into account by the Public Works Department. But the extra revenue is only incidental as already submitted. The work will be sanctioned as a minor work for which neither capital nor revenue accounts will be kept. Subject to the orders that may be passed regarding the provision for compensation the draft order of the Public Works Department may be accepted in Revenue.

M.R.N.
27–4–11.

Secretary—

The Public Works Department (Irrigation) order may be accepted.

J.T.G.
2–5–11.

A.G.C.
3–5–11.

To the Financial Department u.o.

FINANCIAL DEPARTMENT.

In G.O., No. 197 I., dated 8th May 1909, an estimate amounting to Rs. 3,300 was sanctioned * for excavating a *temporary channel* from Uthamath anicut † to irrigate the lands under the Paliamparavoo † anicut which was washed away by the rains. At the same time, it was decided that the cost of making a *permanent channel*, for which estimates were then under preparation, should be charged to the open capital account of the Periyar system, *i.e.*, to the head "49. *Irrigation Works—Imperial*".

* Under "43. Minor Works and Navigation—Provincial".

† In Periyakulam taluk, Madura district.

Paragraph 1 of report accompanying the estimate—page 3 of G.O., No. 197 I., dated 8th May 1909.

2. It is now proposed to sanction the estimate for a *permanent channel*, amounting to Rs. 40,000, under the *Provincial head* "43. MINOR WORKS AND NAVIGATION—PUBLIC WORKS DEPARTMENT—Class IV—Minor Works for which neither capital nor revenue, nor individual accounts are kept", for the reasons—

(1) that no extension of irrigation in the Cumbum valley is admissible until all lands commanded by the Periyár canals and channels are brought under cultivation, and

(2) that the extra revenue anticipated, viz., Rs. 1,300 is equivalent to a return of only ‡ 3·25 *per cent.* on the capital outlay (Rs. 40,000).

‡ In Chief Engineer's note it is given as 3·3 *per cent.*

(*Vide* paragraph 1919 (VIII) on pages 167–168 of Public Works Department Code, Vol. II).

3. The draft order may, it is submitted, be accepted in Financial. A provision of Rs. 10,000 has been made for the work in the budget estimate for 1911-1912 under the head "43. MINOR WORKS AND NAVIGATION—PUBLIC WORKS DEPARTMENT.

Item 22 on page 26 of Irrigation Minor Works Budget.

M.J.
12–5–11.

V.G.K.
12–5–11.

Chief Secretary—

C. REILLY.
18–5–11.

H. A. STUART.
19–5–11.

To the Public Works Department (Irrigation) u.o.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

Joint Secretary—

With reference to the note, dated 3rd May 1911, of the Revenue Secretary reference is invited to letter No. 215,-S.E., dated 8th March 1911, of the Executive Engineer, Madura division. From the details given in this letter it will be seen that the provision of Rs. 17,681 for compensation for land which has been subsequently increased to Rs. 18,000 owing to the necessity for the acquisition of an additional extent of land does not include the charges of 15 per cent. for compulsory acquisition. To make the point clearer an addition is made in Chief Engineer for Irrigation's note for approval.

2. The draft order has been approved both by Revenue and Financial. It may now be circulated to His Excellency the Governor.

B.G.R.
25-5-11.

Submitted to His Excellency the Governor.

The necessity for this estimate amounting to Rs. 40,000 for constructing a new head to the Paliamparavoo channel, Madura district, is fully explained in the note by the Chief Engineer for Irrigation. The draft order sanctioning the estimate has been accepted in Revenue and Financial and is submitted for approval.

H. E. CLERK.
26-5-11.

Approved.

A. L[AWLEY].
31-5-11.

Under Secretary—

The draft order may now issue.

B.G.R.
1-6-11.

C. PEDDIE.
1-6-11.

Issue.

H. E. CLERK.
1-6-11.

[Issued as G.O., No. 187 I., dated 16th June 1911.]

CURRENT No. 6590 59

PASSED ON

R. C.

U. R. C. 18/6

REF.

R. K.

.O.

Col. CT

Administrative & Historical

E.I's Office.

Note by the Chief Engineer
for Irrigation.

12. P

ROC No 2859/09 - dy. 11.4.11

(1). The Palayamparavu anicut is the 3rd anicut across the Suruliyar having an ayacut of about 2,100 acres yielding a revenue of nearly 15000 Rs. which is supplied by the Palayamparavu channel taking off above the anicut. This anicut was entirely washed away in October 1908, owing to an abnormal flood in the river due to the breaching of several tanks in the Suruliyar valley during the heavy rains in that month. The formation of a Korambu or mud dam - across the river, at a reasonable cost to divert the supply into the channel in order to save the standing crops was found to be impossible and a new channel was excavated at a cost of Rs. 3,300 from the Uthamath anicut 3 miles higher up the river to supply

vide para 3 of Report accompanying the Estimate (43-50)

Vide Report printed in G.O. No. 1973 dated 8.5.09 flag K.

G.O. 1973 d 8.5.09 K.

flag K

the above lands. The estimate for this work was sanctioned in G.O.No. 197-I., dated 8th May 1909. The new channel proved successful, and the whole - ayacut with rare exceptions was supplie[d] and the standing crops saved.

p. 2 of G.O. 197-I of 8.5.09 K

In his Inspection notes dated 4th January 1909, the Superintending -- Engineer, VI Circle, brought to notice that the failure of the Palayamparavu anicut was not the first of its kind and that it had been rebuilt on several occasions ~~there were several failures in the past~~. It was also reported that the sub-soil was of a treacherous nature, that it was inadvisable to attempt to rebuild the anicut at the same site, and that there was no other site suitable for constructing an anicut higher up the river. The Supg. Engineer recommended the abandonment of the idea of reconstructing the anicut and proposed that the temporary channel excavated from above the Uthamath anicut might be made permanent; he further stated that an

Vide also E.E's letter pp. 23 + 24 of ...

187

61

U. 8

Paper II on p2 of Ro 1972 K 8/5/09

pp 6-13 c.f.

1821

p. 22 to 26 of c.f.

an estimate was being prepared for the work. In this office Memo No. 413-I., dated 5th February 1909, the Supg. Engr. was requested to obtain the counter-signature of the Collector to the -- estimate before its submission for sanction, as a token of his approval to the proposal. With his letter No. 967 C.E., dated 19th November 1909, the Supg. Engineer, VI Circle, submitted plans and estimates amounting to -- Rs. 34,800 for the work, countersigned by the Collector. It was reported that the new channel would be open only, during the Periyar supply season of 9 months in the year, that the Uthama-palayam ryots have a preferential right to the hot-weather supply at Uthamath anicut, and that the ryots under the Palayamparavoo channel should make - their own arrangements for obtaining the hot weather supply to their - channel by means of a koramboo at the old head of their channel. The plans

and estimates were returned to the -
Supg. Engineer with this office R.O.C., No. 2959 of 1909 dated 12th April 1910, with certain remarks for revision and resubmission.

p.p 27-32 of c.f.

Descriptive.

p. 40 of c.f

2. The Superintending Engineer now resubmits the estimate duly revised to Rs. 38,200. The estimate provides for:-

(1) Cutting and widening the temporary channel and providing banks where necessary.

(2) Forming a flood bank for a length of 2670 feet with a margin of 3 feet above the observed M.F.L., commencing from the left wing of the Uthamath anicut to the right bank of the Kuthanachi drainage and stream connecting the head sluice.

(3) Constructing masonry works connected with the channel.

Provision is also made in the -

estimate

estimate for compensation for lands to be acquired and for demarcation.

Technical.

3. Channel. The channel from the right flank of the Uthamath anicut to its junction with the old Palayamparavu channel is 3 miles 1860 feet long and follows ~~almost throughout~~ closely the alignment of the temporary channel already excavated except where 3 short diversions ~~for~~ of lengths of about 400, 600 and 1600 feet respectively, marked on the site survey map were found necessary. It is designed to have a bed width of 7 feet, depth 2½ ft, slopes 1 to 1 and bed-fall 4 ft per mile to carry 62½ cusecs, assuming a maximum capacity duty of 40 acres per cusec for the irrigation of an ayacut of 2500 acres which is made up as follows viz.,

*Plan M. No 291/1910

Plan No 293 & 294

158

(a) the ayacut of 2132 acres under the old Palayamparavu channel,

p 8 of Descriptive Memoir of Suruliyar Minor Basin put up below.

(b) the ayacut and the bed of the two tanks through whose foreshore the

new

64 17.8

the new channel passes-98 ac.

(c) the 20 acres of garden lands which are now water-logged in the Naranathuvanapatti village.

(d) the area under the irrigation sources interfered with by the new channel, viz., 210 acres.

total 2460 acres

or say 2500 acres.

Vide para 6 of the report (pp 45-46 %) + p 21 of c.f.

This low duty of 40 has been allowed as the old channel cannot work at a higher duty and the advantages of remodelling it to work to a higher duty ~~was not~~ ~~could not be~~ would not be commensurate with the expense and trouble involved. Banks will be provided where necessary with a margin of 2½ ft above F.S.L., minimum top width 4 feet and slopes 1½ to 1.

Plan M. No. 292, 295 + 296/1910

Flood bank. The top-width and side slopes of the flood bank at the head have been increased in this office from 6 to 8 feet and from 1½ to 1, to 2 to 1 respectively.

20

Head sluice

65

18.

Plan No 297/1910

Head sluice. This consists of a single vent 6 feet wide and 3 feet high regulated by a screw gearing shutter with ball bearing arrangements and can pass the required supply with a head of 6 inches. The thickness of concrete to foundations may be reduced from $2\frac{1}{2}$ to $1\frac{1}{2}$ feet if the Superintending Engineer sees no objection to the same. The soil as reported is Kunkar, at that depth, and the thickness of concrete provided appears excessive.

1852
16/6/14

Plan No 304/1910

Iron pipe aqueduct at 6336. Pipes of 6 inches diameter have been substituted for those of 4 inches allowed in the estimate.

Plan No 307

Inlet and outlet with regulator at 12408 feet. The value of 570 taken for C (in the formula $D = C M^{2/3}$) in calculating the maximum flood discharge from the drainage area is considered low and has been raised to 700, the discharge

being

21

66 19 8

being increased from 757 to 1113 cusecs. The crest of the inlet wall has now been lowered to F.S.L. in the channel and provision made for raising the bank by 1½ feet for a length of 300 ft at the site. It is suggested in the report accompanying the estimate that the proposed outlet may be built as a calingulah with its crest at 1 foot above bed of channel and dam stones at F.S.L. with a view to minimise the risk of breaches in the channel in case of sudden floods and also to prevent silting in the channel. Considering the remoteness of the locality from the ayacut under the channel and the possible wastage of water by leakage through the turf bund to be erected over the calingulah, it is not considered advisable to convert the outlet wall into a calingulah.

para 17 of the report pp. 49-50 c/.

182

Plan No. 299/1910

Aqueduct at 3630 ft. This is designed to pass the cross drainage

amounting

67 20.P

amounting ~~do~~ to 356 cusecs under the channel. The work as designed necessitates the ~~deep~~ cutting of deep approach channels in front and rear. It might be better to carry the channel under the drainage stream by means of a syphon and a design prepared in this office costs Rs. 1,640 against Rs. 1,840 for the aqueduct. This may be adopted, if the Supg. Engineer ~~sees no objection to it.~~ finds it suitable.

Plan No 299-A

1820

As the lump sum provided for -- constructing sluices in the channel for supplying the ayacut under the - Tamaraikulam and Pallakulam tanks proposed to be abandoned is considered inadequate it has now been increased from Rs. 240 to Rs. 500 to meet also the cost of excavating distributaries.

Compensation for land. The value of compensation allowed is not based on the information from the Revenue - authorities. The Executive Engineer, Madura Division, in his letter No. --

23

No. 245 S.E., dated 8th March 1911, states that the compensation for land has been fixed after careful enquiry and there is no reason to think that the amount will be exceeded and that the Sub Divisional officer has been ordered to prepare complete land plan and schedule without delay for submission to the Collector. The amount of compensation has been increased from Rs. 17,681 to Rs. 18,000 to meet the cost of the extra width of land required owing to the alterations made in this office in the top-width and slopes of the flood bank. The Supg: Engineer should see that the amount of land compensation is ascertained in consultation with the Revenue Dept: before the work is put in hand. The alterations carried out in this office have raised the amount of estimate from Rs. 38,200 to Rs. ~~39,300~~ 40,000. With reference to letter No. 249 C.E., dated

22nd

Vide page 52 of c.f. + also para 18 of the report - p. 50 of c.f.

This amount does not include the percentage charges allowable for Compulsory acquisition.

x of which Rs 18000 is for Land Compensation

page 63 of Est. file

pp 40-42 c.f.

168

22.6

22nd February 1911, from the Superintending Engineer VI Circle, the Chief Engineer for Irrigation considers that "Well drops" should be constructed.

Financial.

4. As the proposed channel is chiefly intended to irrigate the -- existing ayacut already assessed and as no extension of irrigation is -- admissible in the valley until all the lands commanded by the Periyar canals and channels are brought under cultivation no extra revenue is anticipated beyond the sum of Rs. 1,300 referred to in para 6 of the Supg. Engineer's letter No. 967 C.E., dated 19th November 1909 which is equivalent to a return of 3.3 per cent on the capital outlay. Besides this, the

p 16 of C.f.

par 7 of c.f.

(x) This does not include the rev: from 20 acres of ... lands in Naranathuvanapatti. Vide (c) at p. 64.

1870

75

the proposed work will obviate the necessity of maintaining an anicut, which has been reconstructed on several occasions and on which a sum of Rs. 382 has been incurred annually on the average of recent years. In view of the assured supply to existing irrigation, the work is considered to be of sufficient importance irrespective of the revenue-return, and it may be sanctioned as a Class IV (a) Minor Work for which neither Capital nor revenue accounts are kept.

5. The Supg. Engineers action in having permitted the Ex. Engr. to collect materials in anticipation of sanction to the estimate may be approved considering the urgent nature of the work.

page 42 of ... file

MS 28.3.11.

[signature] 29.3.11

[signature] 11/4/11

To

The Joint Secy to Govt: P.W.D(I)
with the ~~current file~~. papers quoted in original.

1/

SUBJECT.— Excavating a new permanent channel from the right flank of the Uthamathur anicut for the irrigation of lands under the ruined Palayamparavoo anicut. — Madura Dt.

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Urgent

READ again the following

G.O. No. 197-I d/8.5.1909 flag K

Read also

From the Supdg Engineer, VI circle,		d/25.5.09 No. 429 CE.
From	do	d/ 7.7.09 No. 538 CE.
Reminder to	do	d/ 14.10.09
From	do	d/ 24.10.09 No. 883 CE.
From	do	d/ 19.11.09 No. 967 CE.
To	do	d/ 14.12.09 R.o.c No. 2959/09
To	do	d/ 22.12.09 R.o.c No. 2959/09
From	do	d/ 10.2.10 No. 162 CE.
From	do	d/ 14.3.10 No. 290 CE.
To	do	d/12.4.10 R.o.c No. 2959/09
From	do	d/11.4.10 No. 391 CE.
From	do	d/16.5.10 No. 500 CE.
To	do	d/27.5.10 R.o.c No. 2959/09
Reminder to	do	d/25.11.10
From	do	d/7.12.10 No. 1190 CE.
From	do	d/22.2.11 No. 249 CE.
From	do	d/12.3.11 No. 335 CE
From	do	d/ 6.4.11, No. 431 CE
To	do	d/12.4.11, Roc No. 2959/09

3

Pages 59-70 CF

Note by the Chief Engr. for Irrigation d/11.4.11, Ro.c No 2959/o

Order:. No 187-I. Dj 16-6-1911.

The following estimate is sanctioned:-

Provincial

Irrigation

43. Minor Works & Navigation

Class IV - Minor Work for which neither Capital, nor Revenue nor individual accounts are kept.

(a) in charge of the P.W.D.

Original Works.

Madura Division.

Excavating a new permanent Channel from the right flank of the Uttamathu anicut for the irrigation of lands under the ruined Palayamparavoo anicut

Estimate . ~~39,300~~ 40,000 Rs ×

× Includes Rs 18,000 for land compensation.

Print Report

Print Note

31.5.11

1870

2

4

3

2518

2 This Sanction is regi-
tered as No: 24-I of 1911-1?

3 The attention of the
Supdg Engr., VI circle, i
drawn to the remarks
of the Chief Engineer for
Irrigation in para 3 of
his foregoing note.

Mp 63-69 C.F.

4 The action of the Supdg
Engineer in having per-
mitted the Executive Eng
to collect materials in anti-
cipation of sanction to the
estimate is approved.

187

Irregular Acct

To
The Chief Engr for Irrigation ✓ 4.11.
" Supdg Engr., VI circle ✓
with plans & estimate* } MS Dsp 19/9/11 S.C. Sept 6.9.11.
" Accountant General Madras ✓
" Revenue Dept ✓
" Financial Dept ✓

11/4/11

ordinary press

Print notes

8.4.11

Dispatched on 6.9.11

* Plans & Estimates
already returned to the S.E separately
with E.I's Memo R.O.C. No: 2959/09 dt 12/18-4-11

5

En 15-6-11 En 15.6.11 Ex 16/6/11 NC 16/6

Sw 1—2618

Notes - 1—10

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